



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

WU 16-J

Lawrence Bengal, Supervisor
Illinois Department of Natural Resources
Office of Mines and Minerals
Division of Oil and Gas
One Natural Resources Way
Springfield, Illinois 62702-1271

Dear Mr. Bengal:

Representatives of the United States Environmental Protection Agency (U.S.EPA), Region 5, met with staff of the Illinois Department of Natural Resources (IDNR) during the week of December 4 - 6, 2002 to conduct an evaluation of your Agency's Underground Injection Control (UIC) program. The purpose of this evaluation was to review your program's progress over the past three years, discuss issues and accomplishments, and forecast future program direction. During this review, several areas of the program were highlighted which included program resources, electronic data management, permitting, and enforcement.

Region 5 remains impressed with the quality and quantity of work produced by the IDNR Class II program despite limited resources. We were pleased to have had the opportunity to work with Michele Phillips, your Enforcement Chief, on this last review before her retirement and we feel strongly that steps need to be taken to replace her and key enforcement staff. Attached is a report outlining the findings and recommendations of this review team. Please do not hesitate to contact me with comments or questions regarding this report.

Again, thank you for your hospitality during the review team visit in December as well as the dedication and continued support for the UIC program by you and your staff. We look forward to working with you in 2003.

Sincerely yours,

A handwritten signature in cursive script, reading "Sally K. Swanson", followed by a long horizontal flourish.

Sally K. Swanson, Acting Chief
Underground Injection Control Branch

**Illinois Department Of Natural Resources
Class II Underground Injection Control Program
Program Evaluation**

I. Executive Summary

The Illinois Department of Natural Resources (IDNR), received primacy for the Underground Injection Control (UIC) program in accordance with Section 1425 of the Safe Drinking Water Act in 1984. The IDNR program regulates over 8,000 Class II UIC wells operated by the oil and gas industry and receives an annual UIC grant from the Region in the amount of approximately \$285,000.

On December 4-6, 2002, John Taylor, Helen Lenart, Roger Hall and Jeff McDonald of the UIC Branch, United States Environmental Protection Agency, Region 5, performed an evaluation of IDNR's Class II UIC program.

In summary, Region 5 commends the IDNR for its excellent work performed over the past three years and for continued outstanding performance. IDNR has consistently managed a large workload with a relatively small staff. IDNR performs fine technical reviews of its permits, identifies large numbers of enforcement actions, and plugs an average of 500 wells per year through the plugging and restoration fund. U.S. EPA looks forward to working with IDNR as it moves ahead with its program.

Our review identified two areas that deserve attention. The first relates to staffing levels and the second to automated record keeping. The December 2002 retirement of the Enforcement Chief and two prior vacancies have not been backfilled. The Region is concerned that IDNR will not be able to sustain an effective enforcement program unless these positions are filled. The number of unaddressed violations is rapidly escalating and steps need to be taken soon to prevent a breakdown of the system. IDNR has developed and maintained a computer based paperless office system. While this is commendable, there needs to be a back up system for times when the mainframe portion goes down and work cannot be performed. Additionally, IDNR has purchased hand held units and intends to use them but has no support for coordination and integration of software once the data is sent from the field to the IDNR office in Springfield. U.S. EPA will explore providing some assistance in this area. Steps to address these areas would enhance the IDNR Class II UIC program greatly.

All in all, U.S. EPA is pleased with its findings and looks forward to working with state UIC staff regarding our findings and recommendations to identify positive future program direction.

II. Programmatic Review

A. Resources

Observations

IDNR continues to perform excellent work with limited resources. Program staff have been able to gain efficiencies through extensive use of computers and the paperless office environment. However current staffing levels are at or below the minimum needed to adequately address the enforcement workload. Two vacancies have occurred in the enforcement area and the Enforcement Chief retired effective January 1, 2003. The rate of wells returning to compliance has dropped dramatically over the past two years.

Conclusions

The drop in the compliance rate is causing national concerns to be raised about the IDNR program. It is imperative that at least two of these vacancies be filled if the program credibility is to be maintained.

B. Electronic Data Systems

Observations

The Division of Oil and Gas at IDNR has been involved in a continuing Electronic Data Processing (EDP) program to streamline data collection and distribution of information within the Divisions' headquarters in Springfield and field offices. This increases staff effectiveness in administering the UIC and production related regulatory programs. The Division has been involved in an upgrade of the computer database system and the implementation of a document imaging system.

In the process, IDNR has made great strides in establishing a paperless office which could serve as a national model. Some items are scanned when received. After a permit is issued or an enforcement action is closed, all the remaining documents are scanned. Some portions of the original permit application are kept by the Illinois Geological Survey and other portions discarded. While this is a very efficient system, problems can arise. During our visit, a computer virus entered the IDNR server through another Division and caused the entire system to crash. The Oil and Gas Division was essentially shut down and we were unable to continue our review since there are no paper back ups to most actions. The available back up system consisted of 132 compact disks which would have to be reloaded into the system. While the back up disks are recreated every day, the sheer volume of what has been backed up to date makes recovery a huge task. While the situation was resolved within a few days, the resultant down time adversely impacted IDNR management and staff ability to conduct their jobs and for U.S. EPA to conduct its review.

The final portion of the Division's effort will be the use of "handheld" computers to streamline the collection of field data. Although equipment has been purchased, the handheld computer field project has not been implemented due to the incompatibility of the software and mainframe system.

The goal of this project is to allow electronic gathering of field inspection information including plugging reports, MIT reports, temporary abandonment and tubing and packer reports. These electronic files would be downloaded into the IDNR database and then converted to text files for storage in the document imaging system. Paper copies of the forms would not be generated, but would be viewed by staff through the Division network. The Division has completed the basic data collection software program through a grant from the Department of Energy (DOE) /Interstate Oil and Gas Compact Commission but lacks the staff expertise necessary to develop the remaining software elements to fully integrate the field system with the Division system.

Since most IDNR programs are primarily non-regulatory in nature, it does not appear that EDP and database needs of a large regulatory program, like the Oil and Gas program have received a high priority within IDNR.

Conclusions

We applaud the paperless office approach and efficiencies established. The virus infection which occurred during our visit highlighted the need for redundancy in the system as a loss of all data would be a catastrophe. We recommend that in addition to the back up disks, the information also be backed up on another server which is not tied into daily activities and thus would be less prone to be simultaneously affected by a virus or other hardware or software problem.

We are concerned about the lack of priority given to the Division's computer needs by the management of IDNR. U.S. EPA will explore providing short term assistance from Region 5 staff to help complete the software for the hand held field units. It is important that the Division of Oil and Gas be able to obtain necessary assistance within the IDNR for the long term if the sophisticated data management system which has been developed is to be properly utilized and maintained.

C. Quality Management Plan

Observations

The IDNR Quality Management Plan (QMP) has been approved effective November 2001. At present, the plan must be updated every five years unless substantial program changes are made before that time frame. We are pleased with the thoughtfulness and coordination from both agencies that went into drafting and finalizing this document.

Conclusions

U.S. EPA is pleased with the completed IDNR QMP and encourages IDNR to update this document as necessary.

D. National Reporting Measures

Observations

U.S. EPA recognizes IDNR for its timely 7520 reporting that is consistently of good quality. U.S. EPA Headquarters is currently engaged in a strategic planning effort in order to develop measures of success for the UIC and Groundwater programs in order to better meet U.S. EPA's goal of clean and safe water. This has been a multi year effort and some states have participated. For the states not actively involved, the Ground Water Protection Council has served as a focal point for communicating state interests and concerns. Current 7520 reporting forms remain in use, pending completion of this effort. It is anticipated that 7520 forms may be modified in the future once final measures have been agreed to, however, this will probably take at least a couple of years.

Conclusions

U.S. EPA commends IDNR for its timely and high quality 7520 reporting. U.S. EPA will keep IDNR apprised of any developments in the area of reporting mechanisms. Any suggestions that IDNR has regarding meaningful measures of success are welcome and will be passed along to U.S. EPA Headquarters.

E. Orphaned Well Plugging

Observations

U.S. EPA is pleased to note that IDNR has used "Illinois First" along with plugging and restoration fund (PRF) fees for plugging wells over the past three years. During this time period IDNR has plugged an average of 500 wells per year mainly using Illinois First funding. To date, IDNR has plugged approximately 5,000 wells but there remain about 5,000 wells to be plugged as the abandoned well inventory continues to grow. For the past two fiscal years, IDNR has not used funding from PRF as it is saving these funds to use for future well plugging when the Illinois First program concludes at the end of fiscal year 2004.

Conclusions

U.S. EPA is pleased with the large number of well pluggings that have been accomplished over the last three years through the Illinois First program. U.S. EPA encourages IDNR to continue its fine track record of well pluggings once the Illinois First program ends in 2004, and supports the strategy for conserving PRF money until 2005.

F. Spill Clean Up

Observations

During our last review, an issue had arisen with Illinois Environmental Protection Agency (IEPA) in regard to jurisdictional issues pertaining to standards for chemicals that U.S. EPA follows. According to IEPA, at brownfield or other cleanup sites there is a different set of standards for every chemical and "all events" must meet these standards. This is referred to as the Tiered Approach to Compliance Objectives (TACO) and raises questions as to whether both agencies' standards apply to crude oil contamination cleanups and if so, how differences would be resolved. U.S. EPA is pleased to learn that coordination with IEPA has taken place regarding the TACO standard. A memorandum of understanding (MOU) has been signed between both agencies.

Conclusions

U.S. EPA is pleased to learn of the MOU established between IDNR and IEPA regarding oil spill standards. U.S. EPA encourages IDNR to continue to effectively coordinate with IEPA regarding this issue.

III. Permitting Review

Observations

IDNR provided a list of 70 Class II injection well permits issued in calendar year 2002. The permits issued included 61 for water injection or enhanced oil recovery (EOR) wells and nine for conventional saltwater disposal (SWD) wells. All final permits are scanned into the database and are then shredded. The database went down the morning of Thursday, December 5th; therefore the permit review was limited to three permits, two for EOR wells and one for an SWD well. All of these were converted production wells with each being reviewed from initial receipt of the application to the final permit decision. Since each was a converted production well, a review of its history as a production well was also performed. The permitting process and staff decisions were compared to the IDNR's statutes and regulations for consistency of implementation.

In all three permits reviewed the operators requested higher injection pressures than what the IDNR would allow. Two were limited based on the 0.8 psi/ft fracture gradient default value and the third based on 90 % of the instantaneous shut-in pressure from fracture treatment data. On one EOR permit application, the IDNR requested reservoir data and then used the Newcone program to limit the operator's injection rate to 200 barrels per day due to some old production wells in the area of review (AOR). The Newcone calculations showed that the radius of endangering influence was less than 200 feet with the 200 barrel per day injection rate so that

corrective action measures would not be required on any of the wells in the AOR. One of the permit conditions for this well was that injection was only allowed while the producing wells were pumping.

Conclusions

The IDNR underground injection control program continues to operate a thorough and well documented permit program. The permit actions were supported by documentation included with the permits which demonstrated conditions favorable to the protection of underground sources of drinking water. This is impressive in view of the volume of permit actions accomplished by a small permitting staff.

IV. Enforcement Review

Observations

The Enforcement program within the IDNR's Oil and Gas program is now under unusual strain due to the departure of key personnel including the head of the Enforcement program for the past 15 years, Michele Phillips. As reflected on the 7520 forms, the percentage of wells returned to compliance during the Federal Fiscal Year has declined from 83.4% in FY 2000 to 36.9% in FY 2002. It should be noted that the number of unresolved violations has increased to four times the 2000 level. The large number of compliance issues identified by the field inspectors and main office staff creates a large workload for the program to address and the number of unresolved violations has been growing exponentially due to the program's inability to close out the great majority of them. This situation is due in large part to decreased staffing.

The program has handled this situation in various ways. Some identified violations are not pursued with Notices Of Violation, but are quickly made part of abandonment hearings. This has been effective for some operators, however, this is only applicable in a small number of circumstances. The State has also made use of settlement agreements with various operators as another tool to return wells to compliance. In some of the settlement agreements reviewed during our visit, the State has obtained agreements to have operators return large numbers of wells to compliance. Some settlement agreements have very long compliance schedules and the State will have to periodically ensure that the operators are complying with these schedules.

Under current staffing constraints, the enforcement program routinely makes difficult decisions. If an operator returns to compliance before the program can issue a Director's Decision, the case is often mitigated to zero penalty. This enables the staff to work on cases where compliance has not yet been achieved. There were instances where we questioned the rationale used in calculating some penalties. For example, exceedance the Maximum Injection Pressure was considered due to "lack of reasonable care" by the operator when one could argue that it should be due to the "deliberate conduct" of the operator. This also applies to penalties calculated for

Annular Disposal violations. For those types of violations, penalty calculations under the Seriousness section might also be modified. On the Annular Disposal case reviewed, the State put the probability of environmental damage as Low when it could be argued that it should be High. If IDNR's enforcement actions were tougher, there would be a greater deterrence effect.

The State referred a case to U.S. EPA that although not yet concluded, has resulted in the respondent returning some of the wells back to compliance. The State will give U.S. EPA information on additional operators that they are having problems with. It is hoped that a letter from U.S. EPA will convince Illinois operators that complying with State requirements is preferable to facing a federal enforcement action with significantly higher penalty potential.

Conclusions

Despite the great strides that the enforcement program has made and the resolve shown while working with staffing constraints, there are things that the State should consider doing to improve its enforcement program. The exponential increase in unaddressed violations should not be allowed to continue as the situation will eventually lead to a break down in the enforcement system. The replacement of lost staff should be given high priority. The State already has some non-enforcement staff doing enforcement work. This should only be a temporary solution so as to not impact other parts of the program.

Under the existing penalty framework, The State may want to consider assessing penalties with gravity proportional to the potential threat to the environment. The two violation types referenced above, exceedance of Maximum Injection Pressure and Annular Disposal, are examples that might warrant more severe penalties. While it does not appear that protection of underground sources of drinking water has been seriously impacted, it appears that many operators in Illinois have knowingly ignored State rules and regulations, realizing that the consequences of their non-compliance are usually minor.

IDNR should forward to U.S. EPA a list of operators who might benefit from a reminder letter about federal requirements. U.S. EPA will then send an appropriate informational letter to these operators.

Staple Here

**UIC BRANCH
ROUTING AND CONCURRENCE FORM**

Staple Here

DOCUMENT SUBJECT: _____

ENR Program Evaluation Report

CONTACT: _____ PHONE #: _____ MAILCODE: _____

✓	ROUTING & CONCURRENCE	APPROVAL		RETURNED FOR REVISIONS		REVISED	
		INIT	DATE	INIT	DATE	INIT	DATE
	AUTHOR: <i>Helen Lenart</i>	<i>HL</i>	<i>6/5/03</i>				
	SECRETARY:						
UIC BRANCH REVIEWERS:							
	<i>John Taylor</i>						
	<i>Jeff McDonald</i>						
	<i>Roger Hall</i>						
	UIC BRANCH CHIEF: <i>SALLY SWANSON, Acting</i>						
EXTERNAL BRANCH REVIEWERS							
DIVISION REVIEWERS							
	DIVISION SECRETARY: <i>NORMA IGNASIAK</i>						
	DIVISION DIRECTOR: <i>JODI TRAUB</i>						
REGIONAL ADMINISTRATOR OFFICE REVIEWERS							
	RA SECRETARY: <i>CAROL KAVCIC</i>						
	RA: <i>THOMAS SKINNER</i>						

COPIES XEROXED, MAILED AND DISTRIBUTED

BY: _____

DATE: _____

SPECIAL INSTRUCTIONS: